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number of plants. Jungner properly distinguishes between ontogenetic rain leaves and phylogenetic. It is clear, however, that it is not necessary in every case to attribute the special form to any deeper effective cause than the direct influence of the environment. This whole line of experiments, recorded by Jungner, is a notable contribution to the modern literature of adaptation phenomena—a literature which on the whole is as richly and as sanely developed in the field of plant morphology as anywhere.

CONWAY MACMILLAN.

UNIVERSITY OF WISCONSIN

SCIENTIFIC NOTES AND NEWS.

THE next International Congress of Zoologists will be held in England in 1898 under the presidency of Sir William H. Flower. The International Congress of Physiologists will also hold its next meeting in England, having accepted the invitation to Cambridge given by Prof. Michael Foster.

FOUR American men of science were elected corresponding members at the recent meeting of the British Association: Professor John S. Billings, University of Pennsylvania; Professor D. H. Campbell, University of California; Professor H. F. Osborn, Columbia College, and General F. A. Walker, Boston.

AT the suggestion of Dr. H. Carrington Bolton the Smithsonian Institution is now corresponding with American universities for the purpose of making a collection of all printed Dissertations published by candidates for higher degree.

M. PIERRE FAUVEL reported to the Paris Academy on September 9th that the severe cold of last winter was very destructive to the marine fauna of France, the mortality extending even to a depth at which the temperature could not have had any direct effect. Nearly the entire contents of the

dragnets, both of the marine laboratory and of the fishermen, consisted of animals dead and decomposed. Thus eighty per cent. of the scallops (*Pecten maximus*) were decomposed and the others were in such condition that they could not be sold. In the spring rare species and some new to the fauna of the coast were present in great abundance.

CAPTAIN LENOX-CONYNGHAM is in charge of a mission sent out by the British government for the purpose of determining the difference of longitude between Greenwich and Madras. After having finished operations at Odessa the mission will proceed to Batum and then on to Baku, Resht and Teheran. Facilities have been promised to this mission by the Russian and Persian governments.

SINCE the report on indexing chemical (see p. 478) was presented before the A. A. A. S., Mr. W. D. Bigelow's 'Index to Methods for the Detection and Estimation of Fusel Oil in Distilled Liquors' has been accepted for publication by the Journal of the American Chemical Society.

Prometheus, the German scientific journal, in Nos. 300–302, publishes an article, '*Der thierische Körper als Kraftsmaschinen*,' translated from SCIENCE by Dr. Reuleaux, the Director of the Polytechnicum at Charlottenburg and author of '*Briefe aus Philadelphia*'; the latter famous for their frankness in revealing the defects of German manufactures and especially for their prompt effect in stimulating improvement. Professor Reuleaux prefaces Dr. Thurston's paper by an appreciative introduction, and supplements it by an interesting statement of his own ideas on the subject.

THE next meeting of the German Association of Naturalists and Physicians will be held at Frankfort.

A TELEGRAM to the London *Times* states that Professor Anderson Stuart, of the Uni-

versity of Sydney, has invented an artificial larynx for a man who had lost his voice. The invention is a singular success. The changing of certain reeds contained in the instrument makes the voice soprano, tenor, contralto or bass, at will.

DR. HJALMAR HJORTH BOYESON, professor of Germanic languages and literatures in Columbia College, died on October 4th, at the age of 47 years. Professor Louis Polleus, professor of French in Dartmouth College, died on September 22d, at the age of 56 years.

PROFESSOR ELI WHITNEY BLAKE, who until last June filled the position of Hazard professor of physics in Brown University, died on October 1st, at the age of 59 years. The following particulars concerning his life are taken from the *Boston Transcript*. Professor Blake was born in New Haven, his father being the well-known inventor of the same name. He was graduated at Yale University in 1857, studied chemistry and physics in the universities of Heidelberg, Marburg and Berlin, and returning to this country was named professor of chemistry and physics in the University of Vermont and the State Agricultural College. He was then appointed professor of physics and mechanic arts at Cornell University; later he became acting professor of physics at Columbia College, and from 1870 until last June filled the chair of physics at Brown University.

THE following lines (we do not know at whose instance) have been engraved upon Huxley's tombstone:

"And if there be no meeting past the grave,
If all is darkness, silence, yet 'tis rest.
Be not afraid, ye waiting hearts that weep!
For God 'still giveth his beloved sleep.'
And if an endless sleep he wills, so best!"

DR. ELLIOT FOLGER ROGERS, instructor in chemistry at Harvard University, died on October 3d.

DR. ERNEST BAUMANN, the African explorer, died at Cologne on September 4th, at the age of 24 years.

MR. JAMES CARTER, paleontologist at Cambridge University, died recently at the age of 81 years.

DR. HEINRICH ADOLF BARDELEBEN, professor in the medical faculty of the University of Berlin, died recently at the age of 76. Dr. Bardeleben was the author of a number of important works, the principal of which is a text-book on Surgery and Surgical Operations, in four volumes, which has passed through a number of editions.

GENERAL O. M. POE, U. S. Engineer, died on October 1st.

THE German correspondent of the *N. Y. Evening Post* writes that Professor H. Kayser, Director of the Physical Institute in Bonn, has demonstrated that helium (as well as argon) exists in a free condition in nature. The waters of Wildbad, in the Black Forest, for instance, contain in the bubbles of gas rising continually to the surface (about 96 per cent. nitrogen), both those elements which on bursting escape into the surrounding atmosphere. Even in the natural air in Bonn, Professor Kayser found helium in a free state, but, as the spectroscope showed, in infinitesimal quantities.

HOUGHTON, MIFFLIN & Co. announce the publication in book form of Mr. Percival Lowell's articles on 'The Planet Mars,' reprinted from the *Atlantic Monthly*.

PROFESSOR VICTOR RYDBERG, the Swedish writer and archæologist, died on September 22d, at Stockholm, at the age of 67 years.

A REPRESENTATIVE of the Jackson-Darmsworth expedition has received a cablegram from Vardi beyond the North Cape with the news that the 'Windward,' after an exceptionally severe winter in the Arctic seas, had at last regained inhabited regions. Mr. Jackson and his party, in-

cluding equipment, dogs and provisions, had been safely landed on Franz Joseph Land, on September 7, 1895. Two days later ice closed round the 'Windward' and she was frozen in for the winter. The crew remained on the ship, but joined in the efforts of the explorers (who took up their abode in treble-walled Russian log houses which they had brought with them from England) in procuring fresh meat for food. When the ship left the explorers they were starting on their journey northward with good hopes of being able to explore successfully the unknown polar regions.

THE Dominion Medical Association held its twenty-eighth annual convention under the presidency of Dr. W. Bayard, on August 28th.

THE Rev. Dr. Williamson, professor of astronomy in Queens University, died on September 27th, in Kingston, Ontario, at the age of 87 years.

MR. EPHRAIM W. BULL, the well-known agriculturalist, died on September 26th, at the age of 89.

EXPERIMENTS in marching have been recently undertaken by students of medicine in the Friedrich Wilhelm Institute in Berlin, at the request of the German War Office. The results as reported in *The British Medical Journal* are as follows: The marches performed varied from 22 to 33 miles in length and were undertaken in all weather. The weights carried were from 48 to 68 pounds. A march of 25 miles undertaken at a temperature of 60° F. had no ill effect even if continued for some days consecutively, but under the same conditions at a temperature of 70° F. it necessitated a rest of at least ten hours in the twenty-four. A load of 68 pounds carried 25 miles produced grave physiological disturbance and necessitated a complete rest on the following day, but if the distance were reduced to fifteen miles 60 pounds

could be carried day after day in ordinary summer weather without injurious effects.

A LETTER written to the *American Machinist* states that the new rule allowing inventors six months instead of two years' time in which to prosecute an application for a primary examination went into effect April 15, 1895. Pending cases will be affected as though the last office decision were upon that date; therefore, all applications which were pending before that date should be amended or argued before October 15, 1895.

UNIVERSITY AND EDUCATIONAL NEWS.

THE fifth annual Report of the U. S. Commissioner of Education, Dr. William T. Harris, for the year ending November 30th, 1893, states that the entire number of pupils in the schools and colleges of the United States was 15,083,630, 22.5 % of the population, an increase of 370,697 over the previous year. The number of pupils enrolled in the public schools was 13,510,719, an increase of 1.92 %. The average attendance showed an increase of 3.45 %. The attendance for each child was only during about one-fifth of the year. 122,056 men and 260,954 women were employed in teaching. The number of schoolhouses was 235,426, valued at \$398,435,039. It is stated that the value of school property and the common school expenditure have more than doubled during the preceding twenty years. The report contains statistics of public high schools, professional educational institutions and normal schools, and includes a review of systems of education in foreign countries; reports of the International Congress of Education at the World's Fair; criticisms on American education by representatives of the German government at Chicago; a report on American technological schools by Professor Riedler, of the Royal Polytechnicum at Charlottenburg, near Berlin, and